

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: P236206

Luminaire Tested: **2SWLED-24HL-LC-UNV-L840-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236206
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1709-316-8)
Test Lab: INNOVATION CENTER(G2)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 2SWLED-24HL-LC-UNV-L840-CD1-U
Description: METALUX SWLED LINEAR LUMINAIRE
2FT FIXTURE WITH 2 ROW LED, CLEAR LENS
Light Source: (112) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

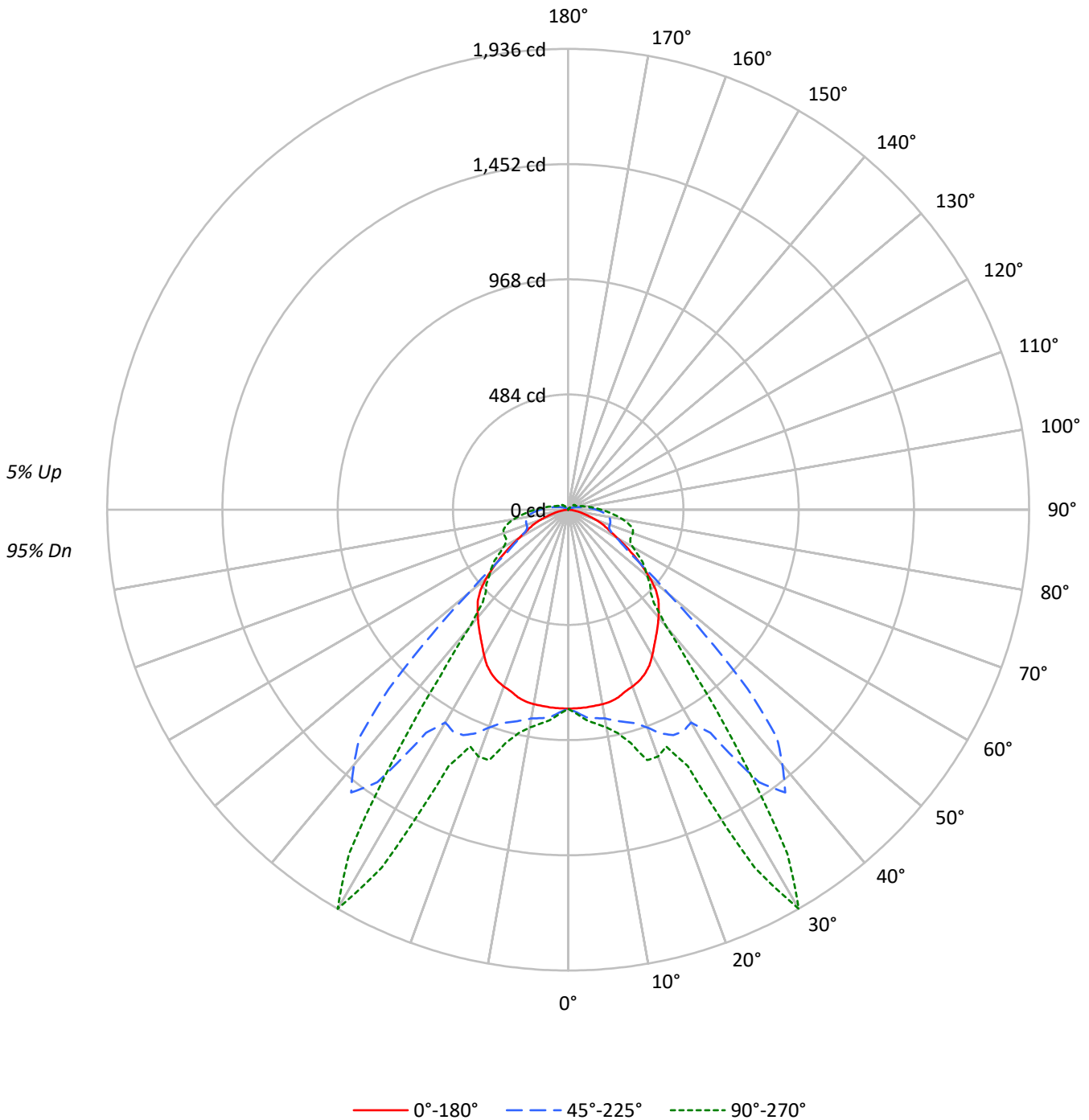
Lumens per Lamp: N/A
Luminaire Lumens: 3211.0 lumens
Efficiency: N/A
Efficacy: 133.8 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.55 / 1.55
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 2' x H: 0.15')
CIE Type: Direct

Input Watts (W): 24
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	118	118	118	118	115	115	115	115	108	108	108	103	103	103	98	98	98	95
1	107	102	98	94	104	100	96	92	94	91	88	90	87	85	85	83	81	79
2	98	90	83	77	95	87	81	76	83	78	74	79	75	71	75	72	69	66
3	90	79	71	65	87	77	70	64	74	67	62	70	65	61	67	63	59	57
4	82	71	62	55	80	69	61	55	66	59	54	63	57	52	60	55	51	49
5	76	63	54	48	73	62	54	48	59	52	47	57	51	46	54	49	45	42
6	70	57	48	42	68	56	48	42	54	46	41	51	45	40	49	44	39	37
7	65	52	43	37	63	51	43	37	49	41	36	47	40	36	45	39	35	33
8	60	47	39	33	59	46	38	33	45	37	32	43	36	32	41	36	31	29
9	56	43	35	30	55	42	35	29	41	34	29	39	33	29	38	32	28	26
10	53	40	32	27	51	39	32	27	38	31	26	36	30	26	35	30	25	24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11995	11995	11995
5°	11940	12261	12368
10°	11938	12270	12671
15°	11886	12609	13650
20°	11755	13296	14761
25°	11655	14364	15922
30°	11235	14390	26208
35°	10735	19935	17544
40°	10423	20598	9035
45°	10136	16315	7149
50°	9236	8838	6605
55°	7696	5375	6115
60°	6055	4276	5356
65°	5169	3813	5327
70°	4275	4105	5855
75°	3108	4574	6189
80°	2058	4996	5990
85°	1024	5233	5534



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.4	2.6
10°-20°	262.6	8.2
20°-30°	479.1	14.9
30°-40°	710.2	22.1
40°-50°	558.6	17.4
50°-60°	384.7	12.0
60°-70°	250.5	7.8
70°-80°	192.9	6.0
80°-90°	131.3	4.1
90°-100°	74.7	2.3
100°-110°	38.3	1.2
110°-120°	20.3	0.6
120°-130°	13.2	0.4
130°-140°	7.7	0.2
140°-150°	2.6	0.1
150°-160°	0.6	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	825.1	25.7
0°-40°	1535.3	47.8
0°-60°	2478.7	77.2
0°-90°	3053.4	95.1
90°-120°	133.4	4.2
90°-150°	156.9	4.9
90°-180°	158.0	4.9
0°-180°	3211.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	836	836	836	836	836	
5°	834	852	875	883	888	79
15°	816	846	923	979	1014	230
25°	761	821	1045	1072	1188	349
35°	644	834	1398	1555	1274	404
45°	536	883	1066	486	489	409
55°	340	607	315	348	380	304
65°	176	344	191	261	288	175
75°	71	143	183	255	274	78
85°	11	55	150	173	183	15
90°	0	42	119	132	139	1
95°	0	33	87	97	104	0
105°	0	16	42	54	58	0
115°	0	7	22	33	38	0
125°	0	3	13	26	33	0
135°	0	1	9	18	22	0
145°	1	1	4	7	8	0
155°	1	1	1	2	2	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	835.8	835.8	835.8	835.8	835.8	835.8	835.8	835.8	835.8	835.8	835.8
2.5°	835.0	836.7	838.5	839.4	841.1	842.0	842.9	846.4	849.9	851.7	852.5
5°	834.1	835.8	840.2	844.6	849.9	852.5	856.9	863.1	869.3	872.8	875.4
7.5°	831.4	835.0	842.9	850.8	858.7	863.1	867.5	873.7	878.9	881.6	883.3
10°	829.7	833.2	843.8	853.4	862.2	864.9	868.4	873.7	878.9	884.2	890.4
12.5°	825.3	830.6	841.1	850.8	856.9	858.7	862.2	870.1	882.5	894.8	907.1
15°	815.6	819.1	830.6	836.7	842.0	845.5	851.7	870.1	892.1	908.0	922.9
17.5°	799.8	801.5	808.6	812.1	820.0	829.7	842.9	872.8	898.3	919.4	940.5
20°	790.1	788.3	787.4	790.1	806.8	822.6	839.4	871.9	902.7	935.3	974.0
22.5°	778.6	771.6	766.3	771.6	801.5	820.9	840.2	878.1	922.9	970.4	1017.1
25°	761.0	750.5	742.6	755.8	798.0	820.9	845.5	900.1	959.0	1003.9	1045.2
27.5°	738.2	726.7	718.8	742.6	795.4	827.9	863.1	930.0	983.6	1025.0	1048.8
30°	706.5	695.1	693.3	728.5	798.9	840.2	878.9	944.1	992.4	1027.6	1032.0
32.5°	673.1	666.0	668.7	717.9	803.3	843.8	880.7	939.7	989.8	1023.2	1111.2
35°	644.0	643.2	653.7	713.5	798.0	834.1	867.5	932.6	1001.2	1135.0	1398.0
37.5°	616.8	621.2	643.2	703.9	780.4	816.5	855.2	952.0	1116.5	1372.5	1497.5
40°	590.4	600.0	626.4	681.0	754.9	800.6	862.2	1061.1	1296.0	1367.2	1400.7
42.5°	563.1	572.8	597.4	644.9	733.8	811.2	927.3	1202.7	1252.9	1258.1	1296.0
45°	535.8	542.9	559.6	606.2	748.7	883.3	1036.4	1157.8	1106.8	1176.3	1066.3
47.5°	498.9	505.9	519.1	584.2	801.5	945.8	1037.3	995.1	1028.5	1010.9	777.8
50°	449.6	459.3	478.6	586.8	813.8	887.7	906.2	872.8	929.1	782.2	549.9
52.5°	394.2	406.5	447.8	583.3	726.7	750.5	747.9	783.0	789.2	565.7	404.7
55°	339.6	353.7	422.3	527.9	588.6	607.1	636.1	705.6	620.3	405.6	315.0
57.5°	285.9	307.1	379.2	425.8	464.5	509.4	564.8	617.6	467.2	307.9	266.6
60°	237.6	266.6	314.1	323.8	383.6	447.8	508.5	520.0	352.8	249.9	233.2
62.5°	200.6	224.4	245.5	249.0	329.9	397.7	454.9	418.8	270.1	208.5	204.1
65°	176.0	183.0	184.8	195.3	282.4	344.0	389.8	328.2	216.4	186.5	190.9
67.5°	150.4	145.2	142.5	159.2	236.7	289.5	322.0	259.5	186.5	175.1	186.5
70°	122.3	115.3	111.7	130.2	194.4	235.8	256.9	207.6	167.2	168.9	185.6
72.5°	95.9	90.6	89.7	107.3	155.7	184.8	198.8	170.7	154.0	164.5	185.6
75°	71.3	69.5	72.1	87.1	123.2	143.4	153.1	142.5	143.4	161.0	183.0
77.5°	51.0	52.8	56.3	69.5	95.0	109.1	118.8	124.1	135.5	157.5	179.5
80°	35.2	37.0	43.1	54.5	73.9	84.5	94.1	109.1	128.5	152.2	172.4
82.5°	22.0	24.6	30.8	42.2	58.1	67.7	76.5	98.5	122.3	145.2	162.8
85°	11.4	15.0	22.0	32.6	46.6	55.4	66.0	90.6	116.1	136.4	150.4
87.5°	5.3	7.9	15.0	24.6	38.7	48.4	59.8	84.5	107.3	124.9	134.6
90°	0.0	3.5	9.7	19.4	32.6	42.2	53.7	77.4	96.8	110.9	118.8
92.5°	0.0	1.8	7.0	15.0	28.2	37.0	47.5	68.6	84.5	95.9	102.1
95°	0.0	0.9	5.3	12.3	24.6	32.6	41.4	58.9	72.1	81.8	87.1
97.5°	0.0	0.9	3.5	9.7	21.1	28.2	35.2	50.1	60.7	68.6	73.0
100°	0.0	0.0	2.6	7.9	17.6	22.9	29.0	41.4	50.1	57.2	60.7
102.5°	0.0	0.0	1.8	7.0	15.0	19.4	23.8	33.4	41.4	46.6	51.0
105°	0.0	0.0	1.8	5.3	12.3	15.8	19.4	27.3	33.4	38.7	42.2
107.5°	0.0	0.0	0.9	4.4	9.7	12.3	15.8	22.0	27.3	31.7	36.1
110°	0.0	0.0	0.9	3.5	7.9	10.6	12.3	17.6	22.0	26.4	29.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	0.0	0.9	2.6	6.2	7.9	10.6	15.0	18.5	22.0	25.5
115°	0.0	0.0	0.0	1.8	5.3	7.0	8.8	12.3	15.8	18.5	22.0
117.5°	0.0	0.0	0.0	1.8	4.4	5.3	7.0	9.7	13.2	15.8	18.5
120°	0.0	0.0	0.0	0.9	3.5	4.4	5.3	7.9	11.4	14.1	16.7
122.5°	0.0	0.0	0.0	0.9	2.6	3.5	4.4	7.0	9.7	12.3	15.0
125°	0.0	0.0	0.0	0.9	1.8	2.6	3.5	6.2	7.9	10.6	13.2
127.5°	0.0	0.0	0.0	0.9	1.8	1.8	2.6	5.3	7.0	9.7	12.3
130°	0.0	0.0	0.0	0.0	0.9	1.8	2.6	4.4	6.2	8.8	11.4
132.5°	0.0	0.0	0.0	0.0	0.9	0.9	1.8	3.5	5.3	7.9	10.6
135°	0.0	0.9	0.0	0.0	0.9	0.9	1.8	2.6	4.4	7.0	8.8
137.5°	0.0	0.0	0.0	0.0	0.9	0.9	0.9	2.6	3.5	5.3	7.9
140°	0.0	0.9	0.9	0.9	0.9	0.9	0.9	1.8	2.6	4.4	6.2
142.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	2.6	3.5	4.4
145°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.8	2.6	3.5
147.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.8	2.6
150°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.8
152.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
155°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
157.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
160°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	835.8	835.8	835.8	835.8	835.8	835.8	835.8	835.8	835.8	835.8
2.5°	855.2	857.8	859.6	858.7	858.7	858.7	859.6	859.6	857.8	859.6
5°	878.1	881.6	882.5	883.3	883.3	884.2	886.0	886.9	885.1	887.7
7.5°	887.7	891.3	894.8	896.5	897.4	898.3	901.8	904.5	904.5	907.1
10°	899.2	907.1	912.4	915.9	917.7	918.5	922.9	925.6	926.5	929.1
12.5°	917.7	928.2	936.1	943.2	945.8	947.6	952.0	955.5	958.1	960.8
15°	937.9	952.8	965.2	974.8	979.2	986.3	994.2	1002.1	1010.0	1014.4
17.5°	965.2	992.4	1018.0	1039.1	1050.5	1060.2	1076.9	1088.3	1098.0	1103.3
20°	1014.4	1054.0	1085.7	1101.5	1105.9	1108.6	1107.7	1105.1	1105.1	1103.3
22.5°	1061.1	1089.2	1095.4	1087.5	1084.8	1082.2	1076.9	1072.5	1072.5	1076.0
25°	1070.7	1070.7	1063.7	1064.6	1072.5	1076.9	1100.7	1137.6	1164.0	1187.8
27.5°	1047.0	1051.4	1098.0	1197.4	1274.9	1332.9	1472.8	1577.5	1642.6	1695.4
30°	1071.6	1223.8	1448.2	1654.9	1742.1	1804.5	1888.1	1921.5	1928.6	1936.5
32.5°	1335.6	1603.9	1753.5	1809.8	1809.8	1812.4	1782.5	1743.8	1701.6	1713.0
35°	1596.0	1673.4	1673.4	1616.2	1554.6	1510.7	1401.6	1319.7	1266.1	1274.0
37.5°	1541.5	1526.5	1416.5	1248.5	1158.7	1098.0	981.9	915.0	878.9	883.3
40°	1400.7	1242.3	1043.5	868.4	798.0	758.4	688.9	654.6	637.9	639.6
42.5°	1131.5	886.0	717.1	614.1	585.1	563.1	542.9	534.9	531.4	533.2
45°	804.2	615.0	526.1	490.1	486.5	483.0	481.3	483.9	486.5	489.2
47.5°	568.4	468.9	444.3	441.7	444.3	448.7	454.9	460.1	462.8	466.3
50°	431.1	396.8	395.9	403.8	408.2	414.4	421.4	426.7	429.4	432.9
52.5°	349.3	344.9	354.6	367.8	374.8	381.8	392.4	400.3	403.8	406.5
55°	300.0	309.7	326.4	340.5	348.4	355.4	366.0	373.9	377.4	380.1
57.5°	268.3	282.4	295.6	308.8	314.1	320.3	329.9	337.0	339.6	342.3
60°	237.6	251.6	266.6	279.8	286.8	293.0	301.8	307.9	310.6	312.3
62.5°	214.7	232.3	249.9	263.1	269.2	274.5	282.4	288.6	291.2	293.9
65°	205.9	225.2	243.7	256.0	261.3	266.6	276.3	282.4	285.9	287.7
67.5°	205.9	225.2	242.8	256.0	262.2	267.5	278.0	284.2	286.8	288.6
70°	206.8	226.1	245.5	258.7	263.1	269.2	278.9	285.1	287.7	288.6
72.5°	206.8	227.0	243.7	257.8	262.2	267.5	276.3	281.5	284.2	285.1
75°	204.1	223.5	238.4	251.6	255.1	258.7	267.5	271.9	273.6	273.6
77.5°	198.8	214.7	228.8	237.6	241.1	242.8	249.0	253.4	255.1	255.1
80°	190.0	201.5	212.9	219.1	220.0	221.7	227.0	229.6	230.5	232.3
82.5°	176.8	185.6	190.9	195.3	195.3	197.1	203.2	205.0	206.8	207.6
85°	160.1	166.3	168.9	171.6	173.3	174.2	178.6	180.4	182.1	183.0
87.5°	141.7	146.1	147.8	151.3	151.3	153.1	156.6	158.4	159.2	160.1
90°	123.2	126.7	128.5	131.1	132.0	132.9	136.4	137.3	138.1	139.0
92.5°	105.6	108.2	110.0	112.6	113.5	113.5	117.0	117.9	118.8	119.7
95°	90.6	92.4	94.1	95.9	96.8	97.7	100.3	102.1	102.9	103.8
97.5°	76.5	78.3	80.9	82.7	83.6	85.3	87.1	88.9	88.9	89.7
100°	64.2	66.9	69.5	71.3	73.0	73.0	75.7	76.5	77.4	77.4
102.5°	54.5	57.2	59.8	61.6	62.5	63.3	65.1	66.0	66.9	66.9
105°	45.8	48.4	51.0	53.7	54.5	54.5	56.3	57.2	58.1	58.1
107.5°	38.7	41.4	44.0	46.6	47.5	48.4	49.3	51.0	51.9	51.9
110°	33.4	36.1	38.7	40.5	42.2	42.2	44.0	45.8	45.8	46.6



TEST NUMBER: P236206

CATALOG NUMBER: 2SWLED-24HL-LC-UNV-L840-CD1-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	28.2	30.8	33.4	36.1	37.0	37.8	39.6	40.5	41.4	41.4
115°	24.6	27.3	29.9	31.7	32.6	33.4	35.2	37.0	37.8	37.8
117.5°	21.1	23.8	26.4	28.2	29.9	30.8	32.6	34.3	35.2	35.2
120°	18.5	21.1	23.8	26.4	27.3	28.2	30.8	32.6	33.4	33.4
122.5°	16.7	19.4	22.0	24.6	26.4	27.3	29.9	31.7	32.6	33.4
125°	15.8	18.5	22.0	24.6	26.4	27.3	29.9	31.7	32.6	33.4
127.5°	15.0	18.5	21.1	24.6	25.5	27.3	29.9	31.7	32.6	32.6
130°	14.1	17.6	20.2	22.9	24.6	25.5	28.2	29.0	29.9	30.8
132.5°	13.2	15.8	18.5	21.1	22.0	22.9	24.6	25.5	26.4	26.4
135°	11.4	14.1	15.8	17.6	18.5	19.4	20.2	21.1	22.0	22.0
137.5°	9.7	11.4	13.2	14.1	15.0	15.8	16.7	16.7	17.6	17.6
140°	7.9	8.8	10.6	11.4	11.4	12.3	13.2	13.2	13.2	13.2
142.5°	6.2	7.0	7.9	8.8	8.8	9.7	9.7	10.6	10.6	10.6
145°	4.4	5.3	6.2	7.0	7.0	7.0	7.9	7.9	7.9	7.9
147.5°	3.5	3.5	4.4	5.3	5.3	5.3	6.2	6.2	6.2	6.2
150°	1.8	2.6	3.5	3.5	3.5	3.5	4.4	4.4	4.4	4.4
152.5°	1.8	1.8	2.6	2.6	2.6	2.6	2.6	3.5	3.5	3.5
155°	0.9	0.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
157.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
160°	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)